

33. (New) The method according to claim 31, wherein the kaolin powder is present in an amount of about 3% to about 15% by dry weight in the mineral insulation.

34. (New) The method according to claim 31, wherein the kaolin powder is present in an amount of about 5% to about 10% by dry weight in the mineral insulation.

35. (New) The method of claim 31, wherein the kaolin powder fills the cavities in the magnesium oxide.

### REMARKS

Claims 21-35 are presently pending in the application.

Applicant has cancelled claims 1, 3-9 and 11-20, without prejudice, and substituted therefore new claims 21-35. Support for adding these new claims can be found throughout the specification and in the cancelled claims. As such, no new matter has been added by this amendment and entry of the new claims is respectfully requested.

In the Office Action dated September 4, 2002, the Examiner rejected claims 1, 3-9 and 11-18 under 35 U.S.C. § 103(a) as being unpatentable over International Application Publication No. WO 93/05520 of Koch, *et al.* ("Koch") in view of U.S. Patent No. 6,077,472 of Kataoka, *et al.* ("Kataoka"). In support of this rejection, the Examiner makes the same arguments previously made in the Office Action dated April 25, 2002. The Examiner also rejected claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Koch for the same reasons stated in the April 25, 2002 Office Action. Further, the Examiner rejected claim 19 under 35 U.S.C. § 102(b) as being anticipated by Koch again for the same reasons stated in the earlier Office Action.

The Examiner also responded to Applicants' arguments made in the Amendment filed July 26, 2002, stating that Applicants' argument that Koch discloses adding kaolin to a

spinel material made from magnesium oxide (MgO) and aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), and does not disclose adding kaolin to just MgO was not persuasive since the previously pending claims recited the mineral insulation **comprising**, and not consisting of, MgO insulation. The Examiner concluded that the previously pending claims did not exclude additional elements and, therefore, claim 19 was anticipated by Koch.

The Examiner also rejected Applicants' argument that it would not have been obvious to combine the teaching of Koch and Kataoka since Koch discloses adding kaolin to a non-polymer insulation material and Kataoka discloses adding kaolin to a polymer insulation material.

Applicants traverse the Examiner's rejections, and the arguments in support thereof, for the reasons set forth below. Also, while not necessarily agreeing with the Examiner's rejections, Applicants have cancelled all previously pending claims (claims 1, 3-9 and 11-20) and added new claims 21-35 to more clearly recite the scope of their invention.

In response to the Examiner's § 102(b) rejection, Applicants have added new claim 21 which recites, in part, a mineral insulation **consisting essentially of** a mixture of MgO and kaolin. Applicants recognize that the use of the transitional phrase "consisting essentially of" limits the mineral insulation to the specified mixture and to those materials and/or mixtures that do not materially affect the basic and novel characteristics of the claimed invention. However, as recognized by the Examiner, Koch discloses adding kaolin to a spinel material which is made from MgO and Al<sub>2</sub>O<sub>3</sub>, and does not disclose adding kaolin to just MgO. Moreover, Koch does not teach a powdered filler, but rather forms a spinel rod which contains binder and Al<sub>2</sub>O<sub>3</sub> in addition to the MgO. Thus, Koch does not teach all of the elements of claim

21 since use of spinel materially affects the basic and novel characteristics of the claimed invention. Reconsideration and withdrawal of the § 102(b) rejection are respectfully requested.

In response to the Examiner's § 103(a) rejections, Applicants point out that, in addition to adding product claim 1, Applicants have also added three independent method claims (claims 25, 27 and 31). These claims are not taught or suggested by the prior art, and are not obvious over and/or in view of the prior art. Claim 25 recites a method of manufacturing a metal sheathed mineral-insulated cable comprising the step of filling a metal sheath with at least one metallic conductor and a powdered mineral insulation comprising MgO and kaolin. Similarly, claims 27 and 31 also specify methods which comprise the step of filling a sheath with a powdered mineral insulation further comprising MgO and kaolin powder.

Neither Koch nor Kataoka teaches a method of filling a sheath with a powdered mineral insulation comprising MgO and kaolin powder, and there is no suggestion or motivation in these references to modify the references to fill a sheath with such powdered mineral insulations. Instead, Koch discloses a method for forming a ceramic to be used as insulation in an electrical component that comprises the step of combining spinel powder and binder solution into a paste (*e.g.*, Koch, claim 13) and extruding the paste into a rod. Further, the method in Kataoka depends on performing an injection molding process (*e.g.*, Kataoka, claim 1). These prior art references also do not teach the specific weight percentages of kaolin in the mineral insulation as recited in the dependent claims. In fact, prior to the present invention, materials and methods explored to prevent seepage of water into MgO insulation and to reduce the decrease in resistivity of cables at elevated temperatures have been unsuccessful (specification, page 2, lines 3-17). And, contrary to the Examiner's assertion, the features of the claimed

mineral insulation, mainly its ability to prevent moisture infiltration and to reduce the decrease in resistivity of cables by filling a sheath with a mixture of MgO and kaolin powder, are not inherent from the cable of Koch, since that cable does not comprise the structure or material as claimed (see claims 27 and 31). Therefore, claims 25, 27 and 31, and the claims that depend from them, are patentably distinct from the cited prior art.

Notwithstanding, even if *prima facie* obviousness could be shown based on the above-references or combinations of references, such *prima facie* obviousness is sufficiently overcome by Applicants' improved and unexpected results, as discussed above and further described in the specification. Thus, reconsideration and withdrawal of the § 103(a) rejections are respectfully requested.

In view of the foregoing amendments and remarks, Applicants submit that new claims 21-35 comply with the requirements of § 112 and are patentably distinct from the prior art. Accordingly, reconsideration and withdrawal of the rejections, and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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